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FACT SHEET No. 4

Contaminated Drinking Water Wells and Investigation of Groundwater Contamination in the Area of West College Avenue and Clover Drive

Santa Rosa, Sonoma County

The North Coast Regional Water Quality Control Board (Regional Water Board) is investigating groundwater pollution in the area of West College Avenue at Clover Drive in Santa Rosa. The contaminant found in the groundwater in this area is a chlorinated hydrocarbon called tetrachloroethene, or PCE. PCE is an industrial solvent used for cleaning and degreasing and is generally associated with dry cleaning operations. PCE has been detected in 26 water wells in the area since August of 2000. Fifteen of those water wells contain PCE in excess of State drinking water standards.

State and federal agencies have set standards for the contaminant levels allowable in drinking water. These standards are called Maximum Contaminant Levels (MCLs) and define the concentrations of certain chemicals that are allowed in drinking water while still providing protection of public health. The MCL for PCE is 5 parts per billion (ppb) or 0.0000005%. To date, over 130 wells have been sampled, and the majority of sampled wells currently do not show any detection of PCE. However, 30 wells have shown the presence of contamination. Four of these wells contain low levels of contamination not related to PCE contamination¹. The remaining 26 wells are contaminated with PCE, at levels ranging from 0.551 ppb to 576 ppb.

A public health risk exists because the groundwater around the intersection of West College Avenue and Clover Drive contains PCE in excess of the established MCL.

The widespread contamination was first suspected following detection of PCE in a well sampled by a landowner south of West College Avenue in November, 1999. Regional Water Board staff collected a confirmation sample of well water that same month and found PCE at 37.3 ppb in the well. In August 2000, the first well water samples were collected with analytical results reported in late August 2000 showing that a number of domestic water wells are impacted with concentrations of PCE at levels up to 310 ppb. At least one sample has been collected from virtually all the wells but a few wells have yet to be tested because of denial of access. **The level of PCE in well water poses**

¹ The source of this other contamination, which is unrelated to PCE, is not known. However, sporadic, low levels of 1,1,1-trichloroethane have been found in some wells elsewhere in the state from use of household degreasing chemicals. The Regional Water Board staff will be further evaluating the presence of 1,1,1-trichloroethane to determine the likely source of this contamination. Re-testing of these wells is necessary. The MCL for 1,1,1-trichloroethane is 200 ppb.



a public health threat, and contaminated wells should not be used for drinking water.
Individual wells should be sampled to determine whether any contamination is present.

Current Status of Alternative Water Supplies

Alternative water supplies are necessary for persons not connected to city water and where testing has revealed PCE contamination in their domestic well. Wellhead treatment systems have been installed on fourteen wells. The treatment systems utilize two activated carbon filters to provide reliable removal of PCE. Additional treatment systems are available for installation on **all** PCE-affected wells, unless connection to City water is likely to be made within a few days. Once an agreement for installation is reached between the property owner/resident and the Regional Water Board, the filter can be installed in a few days. Residents with affected wells may call Luis Rivera at 570-3769 to arrange for an installation.

Once a treatment system is installed, the activated carbon in the first filter will need replacement when it shows signs of breakthrough. This replacement is anticipated to be necessary no more than one time per year. However, the results of water quality analysis will be used to determine when the activated carbon in the first filter should be replaced. This routine replacement is to ensure that PCE does not routinely reach the second filter. In this way, treatment reliability is greatly increased. Continued periodic testing of treated water will occur on approximately a quarterly schedule. Based on the second round of sampling of the treatment units, replacement of the activated carbon is not yet necessary and the filters are effectively removing all of the PCE prior to use.

Installation of Water Main

The City of Santa Rosa has commenced design of a project for installing a water main in the subdivision south of West College Avenue. The water main would service Clover Drive, Wild Rose Drive, and Blossom Way. A water main already exists along West College Avenue for connection to City water of properties fronting on West College Avenue. Residents fronting on West College Avenue who wish to connect to City water at this time may contact the City of Santa Rosa Utilities Department at 543-3941.

Regional Water Board Investigative and Enforcement Action

On October 31, 2000, the Regional Water Board staff took action pursuant to Sections 13267 of the California Water Code to request an initial assessment of the former dry cleaner that operated at 946 West College Avenue. The landowner submitted a brief workplan and collected limited samples on December 7, 2000. The data from this sampling has not yet been submitted to the Regional Water Board as of this date, but is anticipated on March 2, 2001. The Regional Water Board collected soil and water samples from this property at the same time. The results of these samples show that there are elevated levels of PCE in the groundwater and soil beneath this site.

A new dry cleaner is proposing to start operations at 946 West College Avenue. This dry cleaning operation will use new zero-discharge equipment and will not be using PCE as the dry cleaning chemical. The operations of this dry cleaner are under the jurisdiction of the City of Santa Rosa.



Use of Cleanup and Abatement Funds

The Regional Water Board is using Cleanup and Abatement Account funds to test wells and provide wellhead treatment units. In 2000, the allocation from the Cleanup and Abatement Account fund was \$100,000, and more funds were requested and received in January 2001. The new allocation is \$740,000, to be put toward continued wellhead treatment, investigation of PCE source areas, determining of the extent of contamination, public health outreach activities, and connections to the City water system. In addition, the City of Santa Rosa and the County of Sonoma have each pledged \$50,000 to support the Regional Water Board in continued work efforts in the area. The local governments are also providing technical and staff support to address this contamination problem.

Monitoring of Indoor Air, Soil and Groundwater

The indoor air at homes and businesses in the vicinity of the former dry cleaners will be monitored to determine the levels of PCE. Air samples will be collected from homes within the next few weeks. These results will be compared to typical background levels of PCE found in similar residential areas. Indoor air sampling is scheduled to begin before the end of February. Samplers are left for up to 12 hours in the residence, and then removed. The laboratory results of the sampling are available in approximately 3 weeks following the sampling.

The soil from throughout the neighborhood will be tested to determine the concentration of PCE in soil gas. The first step is to sample gases in the soil pore space (the area of soil filled with air) and determine the concentration of PCE in these soil gases. This information will assist in:

- Determining the location of spill areas
- Potential points of leakage from piping and conveyance systems
- Other potential source areas.

The Regional Water Board will be conducting this soil gas survey in the area of suspected contamination beginning in March. The Regional Water Board has sent detailed documents to property owners and residents explaining the survey and requesting authorization to access property.

Investigation of Geological Conditions and Groundwater Quality

Geological conditions and groundwater quality will be investigated at various depths below the surface to determine which aquifers are affected. The attached drawing (Figure 1) of the subsurface conditions shows the 4 aquifers that we expect to encounter in our investigation. These 4 aquifers are as follows:

1. The "A" zone - shallow water table aquifer likely located 10 to 25 feet below ground surface
2. The "B" zone - below the A zone at approximately 40 to 60 feet below ground surface
3. The "C" zone - below the B zone at approximately 80 to 100 feet below ground surface and
4. The "D" zone - below the C zone layer at depths greater than 100 feet

These depths are approximate and are expected to vary widely throughout the neighborhood. These aquifers are connected by the presence of domestic wells with intake screens intercepting multiple depths. These aquifers are also expected to be somewhat connected by the natural depositions of



sands, silts, and clays. The subsurface information obtained will allow for a better understanding of the location and concentrations of the pollution.

Regional Board Staff will use a Geoprobe drilling rig to conduct this investigation. This work will begin in May. The Geoprobe drilling rig utilized by the Regional Board Staff is capable of drilling as deep as approximately 60 feet depending on the conditions encountered in the ground. To drill to the full depth desired in this case (up to 120 feet) we will bring in a drilling rig capable of drilling to these greater depths. This subsurface work will occur at many sites over a several month period. We will soon contact the owners of property where we seek to do this work.

Additional Sampling of Wells

Additional well samples will be collected from all wells during the late winter and early spring this year after the groundwater has risen. Regional Water Board staff has started this sampling effort by first testing previously uncontaminated wells that are located adjacent to wells with PCE contamination. The results of this second round of sampling from this group of wells shows that the wells have remained uncontaminated. This sampling will continue until all wells in the subdivision have been sampled again during conditions of high groundwater. Staff from the Regional Water Board will contact residents during this time to arrange for collection of these additional samples.

Minimizing Disruption to the Neighborhood

We are aware that the work that we will be undertaking will be a significant additional disruption to the daily lives of the residents. Therefore, we will attempt to provide residents with ample notice of our drilling and sampling activities and their locations. We ask that residents contact us if they have any particular concerns with the schedule and location of our activities.

Upcoming Public Meeting

The Regional Water Board has scheduled a public meeting to provide more complete details on the progress of investigation of the PCE contamination, and to discuss use of the recently acquired Cleanup and Abatement Account funds. The meeting will be at the Finley Center from 7:00 p.m. to 9:00 p.m. on February 28, 2001. Representatives of the City and County will also be participating in the public meeting.

For additional information about this investigation, the upcoming February 28 public meeting, or to request that your domestic well be re-sampled you may call the Regional Water Board at (707) 576-2220. Our internet site (www.swrcb.ca.gov/rwqcb1/west_college/wcollege_clover.html) provides additional information on the Board's investigation and other aspects of the contamination.

Susan Warner
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Attachment - Figure 1

